ASSESSMENT OF SOIL AND SELECTED ECONOMICALLY IMPORTANT PLANTS FOR HEAVY METAL CONTAMINATION FOUND IN CARMONA LANDFILL, CARMONA, CAVITE

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ABSTRACT

The research aimed to analyze the physico-chemical composition, determine heavy metal (Cu, Zn, Cd and Pb) contamination of the soil and selected economically important plant species in the area, and examine the phytoremediation potential of the selected plants. The site was used as a dumping site for the waste of Metro Manila and was ordered for closure in 1998. Soil from the upper and lower landfill was sampled and analyzed using Atomic Absorption Spectrophotometer, and compared against a soil sample from a residential area. Likewise, plant samples were also sampled, analyzed and compared from the three sites. Plants sampled were *Lantana camara*, *Synedrella nodiflora* and *Panicum maximum*. Soil sample texture range from loam, sandy loam to clay with a slightly acidic to near neutral pH. P content, and organic matter is lesser from the landfill soil sample. Concentration of heavy metal from the upper (Cu 0.1760 mg/kg, Zn 23.0188 mg/kg, Cd 0.0359 mg/kg, Pb 0.6177 mg/kg) and lower landfill (Cu 0.2719 mg/kg, Zn 21.0544 mg/kg, Cd 0.0446 mg/kg, Pb 0.6343 mg/kg) is slightly higher from the metal concentration from the residential area, however, still within the permissible amount for the soil. It can be noted that pH, organic matter, and soil texture influence the absorption and retention of the metals in the soil, thereby influencing the amount that is present from the tested plant tissues. Accumulation of heavy metals in plant tissues varies among the species of plant tested; however, accumulation is noted to be highest in leaves. *L. camara, S. nodiflora* and *P. maximum* show promising potential in the phytoremediation of Zn. *S. nodiflora* and *P.maximum* for Pb and *S. nodiflora* for Cd.

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